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ART. XIV.—*A brief Notice of the Vegetable Productions of Ceylon.* By JOHN CAPPER, M.R.A.S.

[Read March 6th, 1852.]

THE following notes upon the Vegetable Productions of the island of Ceylon have been thrown together in the hope that, although devoid of any originality, they may be deemed worthy the honour of a reading by this Society. The writer has been led to draw up this paper chiefly from the many inquiries made of him, as the Commissioner for Ceylon at the Great Exhibition, in reference to the produce of that colony. It would appear that whilst the larger articles of coffee and cinnamon are well enough known as staples of the Ceylon trade, but few have any knowledge of the less prominent produce of the island, more especially of those articles which are cultivated for local use only, or for export to the neighbouring Indian states.

Without entering upon minute or technical details, which might extend these notes to a volume, it is proposed to give a concise and simple detail of the growth, locality, and value of each article of production.

These articles are as follows: coffee, cinnamon, coir, sugar, rice, tobacco, cotton, araca nuts, cocoa nuts, cardamoms, pepper, arrow-root, maize, manioc, fine grains, arrack, cocoa-nut oil, essential oils of cinnamon, citronella, and lemon-grass: dye-wood, ebony, and other furniture woods. It is a fact worth noting that of the above only one article has been introduced into the island by Europeans, during the 350 years they have been connected with it. The sugar cane was brought from the Mauritius, by a merchant of Colombo, about twenty years since.

It may, perhaps, not be without use if the above products be classified under three heads: those which are chiefly exported to Europe; those which are shipped to the adjacent states of India, as well as used on the island; and such as are only produced for local consumption.

The first class comprises coffee, cinnamon, coir, sugar, cardamoms, dye wood, ebony, cocoa-nut oil, and essential oils. Of these the most important by far is

**COFFEE.** When Ceylon became a British possession it was considered as valuable only for its pearls and spice; at the present time the pearl fishery of the island has ceased to be productive, whilst the trade in cinnamon has sunk into an almost profitless speculation. Coffee is now the great staple of the island, and deservedly ranks first

on account of the money value of the yearly exports, not less than the great number of persons, both Europeans and natives, to whom it affords a regular employment. When the Portuguese first settled in the island, in the early part of the sixteenth century, coffee was found growing in many parts of the hilly districts of the interior, though entirely uncultivated, and only known to the priests, who reared it in their temple-gardens, and prepared a medicinal beverage from the berry. The Portuguese settlers in the East paid far more attention to religious than to agricultural or commercial matters, and we accordingly hear nothing of coffee as an article of culture or trade, until late during the Dutch rule in Ceylon. Even at that period it seems to have been shipped to Holland rather as an object of curiosity, and up to the close of the Dutch administration of the island the entire yearly quantity said to have been grown throughout the country was 2,200 cwt. ; though one of the Dutch revenue officers, in his report to the government, gave it as his opinion that ten times that quantity, or 22,000 cwt., might possibly be produced annually. The yearly crops have of late amounted to 300,000 cwt.

Although the British government obtained possession of the maritime provinces of Ceylon from the Dutch in the year 1796, the interior or Kandyan province was not ceded to the crown until 1815, and, inasmuch as coffee will not grow to any extent in the maritime or low country, it followed that no improvement could take place in this culture until after the latter period, when the hill districts became tranquil, and were gradually opened up by good roads. From 1820 to about 1830 the quantity of coffee shipped to England yearly increased, although it still consisted entirely of the native grown, badly prepared berry, reared without any attempt at cultivation, and ranking below almost every other kind of coffee. In 1830 the first attempt at coffee-cultivation and curing was made on a proper scale by the governor of the island, Sir Edward Barnes. The success which attended this experiment, although partial, added to the lowering of the import duty on British East India coffee, by the imperial legislature in 1835, induced several merchants and others to apply for waste forest land, for the cultivation of coffee on the West Indian principle. During 1836 and 1837 upwards of 7,000 acres of crown lands were purchased, and partly cleared and planted. The success of these first operations drew many capitalists to Ceylon for similar purposes, and the land sales, which in 1838 amounted to 10,000 acres, grew to 78,000 acres in 1841. By the end of 1847, when fresh operations had ceased, about three millions sterling appear to have been invested in coffee planting in this island, chiefly by Europeans. The number of plantations formed was

330, the majority of which contained from 120 to 300 acres of cultivated coffee. The total acres brought under this culture, up to 1849, were 50,840, of which, however, several thousands had ceased to be productive. These estates are situated at a great variety of altitudes, ranging from 1000 to 4,500 feet above the sea level. As a rule, good coffee cannot be profitably grown in Ceylon at a less altitude than 2,500 feet : the most favourable height being from 3000 to 3,500 feet.

The best plantations are situated in the Kandyan province, where the thermometer ranges at noon about  $76^{\circ}$ , and in the morning not higher than  $60^{\circ}$ . The principal drawback to the success of these properties has been the absence of roads in many directions, compelling the planter to convey his half-dried crop on the heads of coolies, or on the backs of bullocks, for a distance of 25 to 35 miles, before finding any carriage transport. The dampness and coolness of the hill climate renders it impossible to perfectly cure the coffee berry in those elevated regions ; it has therefore to be conveyed to Colombo, where a constant high temperature enables the merchant to complete the drying process, which the planter had but commenced. In this way, a crop of coffee costs as much to transport it from the estate to the place of shipment, distant about 100 miles, as it will to convey it thence to England.

The labour by which these properties are cultivated is almost entirely imported from the adjoining coast of India, a few Singalese occasionally assisting to gather the crops, when a high rate of pay is held out to them. The coffee thus grown under European superintendence, is known in this country as "Plantation" kind, whilst that which is still allowed to grow wild about the Singalese villages, gathered half-ripe, and rudely cured, is known as "Native" or ordinary Ceylon coffee.

The quantities of the two sorts exported to Europe of late years, have been as follows :

In 1848	.	.	cwts.	280,000,
1849	.	.	"	328,000,
1850	.	.	"	319,000,
1851	.	.	"	273,000,

of which above two-thirds were Plantation coffee. The island consumption amounts to about 25,000 cwts., during low prices ; but when coffee becomes more in demand the natives content themselves with using the black and damaged pieces picked out from the marketable berries. This circumstance will partly account for the small shipments of 1848 and 1851, both years of lower prices than in 1849.

CINNATION. From the earliest period at which any record existed concerning the use of this spice, and which extends back to the days

of the Roman republic, up to the year 1760, during the latter portion of the Dutch rule in Ceylon, cinnamon grew in a wild state, amongst the thick jungles of the low and hilly country, the best always having been cut upon the light soil of the maritime provinces. The Dutch governor Falek was the first who attempted to bring the wild plants into a state of cultivation, amidst much opposition from the native chiefs. His plan, however, only extended to draining the land, and freeing the bushes from woods and low jungle, so as to admit the light and air around them. Nothing further appears to have been done until the island had been in our possession twenty years, when extensive improvements took place. Large tracts of cinnamon land were cleared and opened by the hoe, and, after draining, the vacant spaces were filled up with young plants. The low-country headmen were induced to co-operate by means of promotions and honorary rewards, and by these means the government, in whose hands the culture and trade had always been vested, found itself in possession of five tracts of well-planted cinnamon, varying in extent from 6000 acres to 600 acres, the yearly produce of which rendered supplies from the wild bushes of the forests no longer necessary.

This spice is to be found only in the western, southern, and central provinces, and there appears little doubt that it was the abundance of cinnamon growing on the west coast of the island, which induced the first Portuguese settlers to fix the seat of their government at Colombo, a spot devoid of any harbour or shelter for shipping.

In 1833 the trade in this article was thrown open to the public, and six years later the government commenced the sale of their preserved plantations by monthly auctions. In this way the whole of them, with but one exception, have been disposed of, chiefly to English merchants and capitalists. In some cases, the gardens, as these lands were called, have been brought into a much higher state of cultivation than was previously the case; but in frequent instances they are much neglected, and, upon the whole, the quality of the spice, as now shipped, will not bear comparison with the produce of former years. The forests are still searched for the jungle cinnamon, by the natives, especially when there happens to be a little better demand for the spice; but the quality of this sort is far below that of the cultivated bark, as much as three-fourths of it being generally devoid of any flavour or aroma.

The cinnamon gardens afford employment to a considerable number of Singalese at most times of the year, both for cultivating the bushes, and for preparing the crops, which are taken off twice annually, during the rains attendant on the change of each monsoon. These croppings or peelings continue for about five months in each year, and a great

portion of the remaining seven months is required for putting the gardens in order. Amongst other recent improvements may be mentioned pruning and manuring the bushes ; these have, in some instances, brought the produce of an acre of land from 50 lbs. to 350 lbs. of spice during the year, and this too upon considerable tracts.

The operation of peeling, or removing the bark from the stick, is performed by one particular caste of natives, called "Chalias," a low class of persons, whose ancestors were originally appointed to the duty by the Singalese kings ; and who until lately enjoyed many privileges and exemptions from taxation, in consideration of their services.

The trade in this spice has fallen away sensibly of late years, in spite of the efforts made to save it by liberal reductions of the export duty. During the early part of the Dutch rule in Ceylon their yearly shipments amounted to 10,000 bales, of 88lbs. each ; of which 2000 were for India, Persia, and Arabia. These latter places have long ceased to take any cinnamon, whilst the exports to Europe have been reduced to 7,000 bales of 100 lbs. in 1849, 6,000 bales in 1850, and 5,800 bales in 1851, although the selling price in the London market has been brought down to about one-third of that realized twenty years since. In 1835 the export duty in Ceylon was 2s. 6d. and 2s. according to quality ; it is now only 4d. per lb., on all sorts.\*

COIR and COCOANUT OIL being both the products of the cocoa-nut palm or *Cocos nucifera*, equally exported to Europe, may be noticed together. The palm-tree may be seen in almost every part of the island, but its favourite locality is the low country within twelve or fifteen miles of the sea-coast. The natives believe most firmly that these trees will not thrive out of reach of the sea-beach and the salt-spray from the ocean ; and accordingly, when planting their young palms at any distance from the coast, they place a quantity of salt about its roots. That this is erroneous may be seen by examining those trees nearest the sea : they will be found far less fruitful than those a short distance away. The real fact is, that the soft roots of the cocoa palm grow more rapidly in the light sandy soil of the low country, whilst at some distance inland the ground is too hard for them, and the temperature too low, especially at night. They are chiefly to be found skirting the coast from Calpentyn in the north-west province to Matura in the southern province. The natives have been accustomed to treat these in the same manner as their coffee and cinnamon, leaving the young plants to take care of themselves, exposed to the destructive attacks of wild animals and insects. In this manner twelve and often twenty years are required to bring a cocoa-nut tree into bearing, the

\* The duty has since been altogether removed.

wonder being that these neglected palms ever bear fruit at all. Of late years European capital and skill have been brought to bear upon this produce with remarkable results. In the western province about 6,000 acres are now covered by fine cocoa-nut trees, many in bearing at their fifth and sixth years. In the northern province about 10,000 acres have been cultivated in the same manner, whilst on the eastern coast from 3,000 to 4,000 acres are similarly planted. The ordinary yield of a good tree in full bearing is 50 cocoa-nuts yearly; many trees on European lands produce from 150 to 200 per annum.

For the European market the tree is only available as producing coir fibre and rope from the outer husk of the fruit, and cocoa-nut oil from the kernel when dried in the sun. The manufacture of cordage and rope dates back before the Portuguese period. During the Dutch rule this was an important branch of native industry, and the trade in them became a source of considerable profit to those servants of government who were allowed the monopoly as a remuneration for their services. When properly made from good fibre, coir rope is very soft and of a bright yellow colour, but in quality the manufacture of the present day cannot compare with that of the old Dutch time. In Ceylon scarcely any other rope or cord is used than coir; even the planks of the Singalese trading Dhonies of 50 to 100 tons are fastened together by coir yarn alone. This manufacture is confined to certain districts between Colombo and Galle along the south coast. Coir is exported to this country not only in yarn and rope, but in the fibre, in bales closely pressed: the total shipments of all sorts have lately been about 30,000 or 40,000 cwts. to Europe, and 20,000 cwts. to the states of India and colonies.

The manufacture of cocoa-nut oil for shipment to Europe has only been carried on during the last twenty-five years, although long previously made by the natives for their own use. The bullock-mill employed by them to crush the nut and express the oil is of the rudest make, and has remained unimproved for the last 500 years: a good description of it may be seen in Davy's account of Ceylon.

The first steam oil-mills and hydraulic presses were erected by the government in 1829; and when found to work well, and the article had become known and valued in this country, the establishment was sold to private parties. This oil has ever since assumed an important place amongst the exports of the island.

In 1849 the quantity shipped to England was 512,457 gallons: in 1850, 792,791 gallons, and in 1851, 322,500 gallons. It is this oil which forms the foundation of Price's Patent Candles; it is also much used by soap and pomatum manufacturers. The quantity consumed in the island must be annually about half of the above quantities.

SUGAR, as already observed, is the only article, the manufacture of which has been introduced into Ceylon by Europeans. The first canes planted with a view to the manufacture of sugar, were carried thither from the Mauritius in the year 1832; they were planted in the central province, in the valley of Dombera. The first few acres produced abundantly, and of a good marketable quality; prices in this country being then high, the early shipments left a fair profit, whilst that sold on the spot paid handsomely. Several sugar estates were a few years later formed in the Kandyan country, and eventually eight or ten plantations of some magnitude were commenced in the southern and western provinces. Experience has shown that although one or two good crops may be obtained from newly planted land, the soil is naturally of such a poor nature as to render after-cultivation hopeless, without an outlay for manure which the crops will not justify. From 1846 to the present time sugar cultivation has been gradually abandoned, and at the present time there are but three estates in partial cultivation, and that almost entirely for local consumption. The largest quantity shipped to England in any one year was 10,000 cwts.

CARDAMOMS are collected by the natives in the central and some parts of the southern and western provinces, from plants growing in a wild state amongst dense forests or low jungles. In appearance and strength they are inferior to those brought from the Malabar coast, and sell here for about one-half of the value of the latter. Very little care is given to their drying and packing, which is of course injurious to their appearance, and there can be little doubt but, that were the plants grown in the many village-gardens, together with other produce, a very marketable article would be the result. The shipments of this do not exceed 100 to 150 cwts. annually.

EBONY is found in great abundance in the north of the island, and to some extent in the Kandyan country. The great weight of the timber renders its transport very costly unless where water conveyance can be obtained, which is seldom the case but during the rainy months. Immense forests of this wood are still existing in the island, but to a great extent too far from a port of shipment to be available. The exports of ebony have varied much of late years, from 15,000 to 5,000 cwts.

SAPAN or dye-wood is shipped to this country, where it is employed as a red dye. The tree, of which this is the mature woody part, grows abundantly in the western, southern, and central provinces, without any cultivation. It is fit for cutting when about five years old, at which time it attains a height of ten or twelve feet. The exports have been for the last few years about 6,000 cwts. annually.



ESSENTIAL OILS, of cinnamon, citronelle, and lemon-grass, are made chiefly in the neighbourhood of Galle, in the southern province. The oil of cinnamon is also made largely at Colombo; it is obtained from the broken or inferior pieces of bark rejected in packing the bales of spice. The other oils are the produce of two highly scented grasses, cultivated to a considerable extent by both natives and Europeans for the purpose of distillation. The extent of the trade in these may be thus stated, say for 1849:—oil of cinnamon, 32,400 ounces; oil of lemon-grass, 28,000 ounces.

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The second division of this paper includes tobacco, areca nuts, cocoa-nuts, and arrack, as articles exported only to the neighbouring states as well as consumed upon the island.

Tobacco is cultivated with some attention and success by the Singalese of the western province, the Kandians of the interior, and the Tamils of the northern districts of the island. The Dutch bestowed some care upon this article, but they do not appear to have succeeded in obtaining tobacco suitable to European markets. At the present time the natives frequently prepare a leaf which is mild and fragrant in use, although unsightly in appearance; but the bulk of the tobacco is coarse and rank. This arises from no want of labour expended in the culture, but rather from the leaves being gathered when too old, and from imperfect curing. The Singalese are very careful in the selection of ground for this plant, as well as in its treatment prior to and after planting. Manure is applied to the land in the first instance and once or twice to the young plants, which are also kept constantly watered during dry weather. Not a weed is allowed to appear amongst them, and every care is bestowed that is likely to forward their growth. The gathering and drying processes are managed with as little discretion as can be imagined. Very small attention is paid to the state of the weather at the picking time, and when gathered the leaves are left in heaps until they commence to ferment, when they are suspended on strings or the stalks of the cocoa-nut leaf. One estate has been formed by an European in the southern province, but at present with doubtful success. The principal export of tobacco is to the Travancore country on the Indian continent; a little goes eastward and some to the Maldivo Islands, in exchange for salt-fish, shells, and mats. The yearly shipments have of late amounted to about 22,000 cwts.; at one period they reached 40,000 cwts.

ARECA OR BETEL NUTS have for a long period formed a large item of the export country trade. These nuts are used by nearly all Asiatics.

who masticate them with a little lime, much in the same way as tobacco is used by sailors. The first luxury which a young Singalese or Malabar indulges in is a metal betel-box, worn in the girdle; and those who are too poor for such an ornament content themselves with wrapping their daily supply in a leaf. The areca palm which produces this nut, is one of the most graceful of that tribe; it thrives at a much greater altitude and in a cooler temperature than does the cocoa-palm, though, like the latter, it prefers the light soil and damp heat of the low country. Although flourishing wherever the cocoa-nut tree is found, the districts in which the areca tree grows most abundantly are about the borders of the western, central, and north-western provinces (between Kornegalle and Matele). The fruit grows in clusters, similar to those of the cocoa-nut, at the summit of the tree, each tree yielding about 200 yearly. They are about the size of a large walnut; and when deprived of their shell, which is of no value, the nut is found to be equal in size to a nutmeg. They are exported to Calcutta, Bombay, Madras, Singapore, Penang, and the Maldivé Islands, to the yearly value of £30,000.

Cocoa-nuts also form a prominent feature amongst the exports to Indian states, both in the raw and dried state, in which condition they are known by the name of *copperah*. It is scarcely possible to over-estimate the value of the cocoa-nut palm to the natives of Ceylon and other parts of India. With it they may be said to be independent of all other means of subsistence; and, with a little cotton for a girdle, they could exist without any other resource. Not a part of the tree is useless; every portion is made to minister to the daily wants of the grower. Oil, vinegar, arrack, toddy, sugar, medicines, are produced from the nuts and the sap of the flower. The husk of the fruit yields him fuel, fibre for ropes, and cordage, with which he rigs ships and canoes, and secures his cattle and his fences; and when unspan forms a soft mattress for his couch. The inner hard shell is converted into boxes, drinking-vessels, spoons, forks, and a variety of ornaments. The wood of the tree serves to construct chairs, tables, window-frames, and beams and rafters for the roof, which is thatched by the plaited dry leaves of the tree fastened down by the fresh green leaflets. These plaited leaves also form a substitute for plates and dishes. The hollowed trunk of the tree forms a good canoe, in which the villager puts off to fish with a net of coir yarn, whilst the smaller trees form useful spouts to carry off the rain-water from the eaves of his little hut.

The cocoa-nut when but half grown contains a rich, sweet, cooling liquid, termed milk, though as clear as spring-water; around the

inside of the shell is a coating of young nut, soft and agreeable to the taste. These two parts of the fruit form the simple meal of many thousands of the natives. When fully ripe the kernel is thick and hard, and the milk has nearly disappeared; in this state it is employed in curries, or, when dried, into copperah for oil-making or exporting. The shipments take place chiefly at Galle and Colombo, and amount in value to about £14,000 yearly.

ARRACK is a spirit distilled from the fermented juice of the cocoa-nut flower, and is prepared in certain districts of the southern province of the island, under licenses from the government. It is an article scarcely known in this country, being very seldom imported: during the Dutch period in Ceylon a good deal of it was shipped to Holland and Java, but for many years past the only exports have been to the Indian presidencies, and some of the eastern islands. Until within the last ten years arrack was served out to the troops in the Madras presidency; of late, however, they have had, in place of it, East-India rum. Of the total quantity of this spirit made there are no records. The right of vending it in shops or bazaars is farmed out annually in each province, under the title of the "arrack rent," and generally realizes about £55,000.

The shipments of arrack have fallen off, from 1000 pipes in 1845, to 520 in 1850.

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The third division of Ceylon vegetable produce comprises cotton, rice, pepper, jaggery, arrow-root, maize, manioc, and fine grains.

COTTON is grown very generally by both the Singalese and Tamil inhabitants of Ceylon; but upon no regular plan, nor to any extent: in some few cases the villagers produce more than they require, and barter their surplus stock with the travelling pedlars for a little salt or dried fish. In the northern and eastern districts some few landholders rear considerable patches of an inferior sort of cotton, which they dispose of to the weavers of Jaffna and Batticaloa; but nearly all the cotton goods manufactured in the island are from imported yarn. Attempts have been made, on several occasions, to introduce American cotton seed, with improved culture, but as yet without any decided success. Fine samples have been produced, valued in this market at from sixpence to eightpence per pound; but, either from exhaustion of the soil, or the heavy cost of production, these experiments have ceased. The Singalese method of cultivation is to place four or five seeds in a patch between their young cocoa-nut plants, or

plantains, at the commencement of the rains in either monsoon. The seedlings will be thinned out when a few inches high, and afterwards weeded once or twice by hand, but no further care is bestowed upon them until the pods are ready for gathering, which they will be in about three months from the appearance of the seedlings. The means used to free the cotton from its seed are as simple as it is possible to conceive. The article is placed in a rush bag held by one hand, whilst with the other a cross-stick is rapidly twirled round amongst the cotton, tearing away the fibres from the seeds. In the north the Tamils pass their cotton between two wooden rollers revolving slowly against each other; and which draw the fibrous substance through, whilst the seeds, being detached, fall to the ground. The staple of Ceylon cotton is very short, but of a beautiful silky texture, and frequently very white. It is impossible to say with any certainty what quantity of this article is annually produced.

Of the very highest importance to this and other eastern nations is RICE: it is to them what corn, and potatoes, and animal food are to Europeans. Few Singalese taste much else, save cocoa-nuts, during the year; every villager is anxious to secure a patch of ground commanding water, on which he may rear this essential article of food. Although the present population of Ceylon does not exceed nine individuals to the square mile, it is yet found that the land does not produce nearly sufficient for the wants of the people, the annual importations of grain amounting in value to about 450,000*l.*; of this sum fully two-thirds consist of rice, prepared or in the husk, which gives about two bushels for every inhabitant; the grain being valued at two shillings the bushel. Three hundred years ago the population of the island was undoubtedly far greater than at present; yet at that period the inhabitants not only raised sufficient corn for all their wants, but were enabled to export it in some quantities to the eastward. The gradual destruction of the gigantic tanks which formerly existed in the northern districts, for the irrigation of the low lands, has led to the depopulation of that part of the island whence were drawn the chief supplies of corn. To cultivate rice without a plentiful supply of water would be impossible. In the hilly districts irrigation is carried on by means of watercourses cut along the sides of mountains, or carried, through bamboos, across valleys, often for a distance of many miles. In the low country, or maritime provinces, the rivers are dammed up during the rainy months, and the streams carried over the rice lands, from which they are gradually drawn off by means of small channels, cut in the margin of every field. Of so much importance is a good supply of water for cultivation, that the native sovereigns of

Lanka believed they performed as righteous an act in constructing a tank or a water-course, as in erecting a temple.

In Ceylon there are eleven kinds of rice grown, viz. : Ratacoonda, Ballanwary, Marlawarigey, Combilley, Tatterwell, Hienette, Suduhienette, Moodu-kirialla, Cooroovie, Balla-maha-vie, and the Dassa-analla. The first five are sown in March, and reaped in July; the next four varieties are sown at the end of May, and gathered at the latter part of July, or early in August; the two last kinds are sown in November and June respectively, requiring five and two months to arrive at maturity. The cultivation of rice in the low lands and the hilly regions of the interior differs in many respects. The supply of water in the maritime provinces is generally more abundant, though less to be depended on, than amongst the hills; added to which violent floods frequently carry away the young crops for many miles around. The soil of the lands in the interior is far more productive than that found in the maritime provinces, though in each situation varieties will be found. Many lands amongst the hills will yield two crops annually, and generally one; but in the low country the ground frequently lies fallow for several years; few fields being rich enough to produce even a crop every alternate year. The yield of crops varies greatly, according to soil, aspect, water, and altitude. Much land produces not more than three or four-fold, whilst some of the finest tracts in the interior yield as much as forty-fold. The Singalese have very little idea of manuring their lands: in some parts of the low country bones are applied on the land with success, but the cultivators are content with turning-in a few bullocks upon the land during the fallow season.

The Singalese have many superstitions concerning their agricultural operations, and never commence work without consulting the priest or the devil-dancer, as to a "lucky day." They hold it to be unfortunate to commence work upon the first or second day in the Singalese month, and after having begun their operations they must desist for a few days at certain intervals. In like manner the threshing of the corn is attended with various observances, and charms are placed around the fresh-gathered crop. When a newly sown field has been reaped, the owner would not dare to partake of any portion of the crop, until an offering of a small portion of it had been made to the nearest temple, in order that the priest might first eat of it.

The rice lands in the low country are seldom cultivated by the proprietors; they are usually given in charge to one or two villagers, who, with the aid of their neighbours, prepare the ground, and attend to the irrigation. The owner finds the seed, and shares equally with

the cultivator in the produce. In the Kandyan country the proprietors usually cultivate their own lands, with the aid of their poorer neighbours, who are paid in rice, or the labour given is returned upon the neighbours' fields.

PEPPER, although only grown in sufficient quantity for local consumption, was at a former period an article of some importance amongst the exports of the island. The Dutch paid great attention to it, and spared no efforts to induce its cultivation, both in the low country and in the Kandyan districts. By the Dutch records it appears that during the early part of the last century, the shipments of this spice amounted to nearly 50,000 lbs., of which one-third was received in barter from the Kandyans, the remainder was grown at Battacalva, Calpenty, and Negombo. Since our possession of the island, pepper has never been grown in any quantity; and when the government determined on shipping it loose amongst their cinnamon bales, in order to preserve the latter from sea-damage, the spice had to be obtained from the coast of India. The little that is now grown can scarcely be said to be cultivated; it is left almost entirely to chance, and consequently yields very indifferently.

JAGGERY, or native sugar, is produced abundantly in the northern districts of Ceylon, from the juice of the Kittool or Jaggery palm, (*Caryota urens*). The sap is drawn off much in the same manner as that from the cocoa palm, but it does not flow so readily, and to obviate this the natives are in the habit of inserting within the surface of the cut flower-spike a small mixture of lime, garlic, sate, and bruised pepper. This is left on the incision for a few days, when it is removed, and the flower again cut; the sap will then flow readily for several months continuously. The collected juice is boiled in earthen vessels to a certain consistency, when it granulates and forms a fair sample of sugar, capable of being refined to a good degree of purity. It is a curious fact that the wood of those trees which have been thus tapped, is very much harder than that of the unemployed trees in the forests, which is quite soft and spongy: the trees longest tapped are much the hardest.

ARROWROOT and MANIOCA are both rather extensively grown in the maritime provinces, the former being inferior in quality to that grown in the West India Islands. They are both very exhausting in their effect on the land, which in those parts of the island is seldom fertile; consequently it is but rare that more than one crop of either can be taken from the same field without a long rest.

From the maniocca the Singalese prepare a fine flour, resembling arrowroot, but much sweeter, and far more nourishing; boiled or

baked with milk it forms a most delicious meal, partaking of the nature of a rich custard.

MAIZE, or Indian Corn, is not grown to any great extent, and its cultivation is confined to the eastern and northern districts. It is employed in a variety of ways, in curries, ground into meal, or boiled whole as a vegetable. It is also given to the working bullocks, with oil-cake and cotton-seed, and is highly esteemed for this purpose.

The FINE GRAINS of Ceylon comprise a great variety of seeds employed by the poorer classes, as articles of food. The principal of these are Koorakam, Cooloo, Moongatta, Panna, Abba, and Ammoo. They, as well as an inferior description of Rice, called Hill Paddy, are grown on poor lands, and yield a very small return, often not more than three-fold. They are used in various ways, some being eaten in curries, some simply boiled, whilst others are ground, and the flour made into cakes or bread. These grains require no irrigation, though their yield depends upon the quantity of rain which may fall during the early period of their growth ; and, from the poverty of most of the soil on which they are raised, whole crops are frequently lost in a very dry season. In the sowing and harvesting of these products the Singalese observe no ceremonies, and hold no superstitions regarding lucky days or evil spirits ; a circumstance worthy of note, as being the sole exception to their many superstitious observances.